REMARKS

Claims 1-27 are pending. Claims 1-27 are rejected. Claims 1,4, 5, 10-15, 19, and 24-27 are presently amended. As a result of this amendment, it is believed that all claims are patentable and that this application is now in condition for allowance.

Summary of the Invention of the Present Application:

The invention of the present application provides a composition and method for determining compliance with a medication regimen. This composition and method is rapid, simple, and inexpensive. In one embodiment, it includes an orally administrable composition in combination with at least one visual marker. This marker is present in a form and amount sufficient to cause a coloration of at least a portion of a mucous membrane or buccal membrane of the oral and/or pharyngeal cavity of a patient. In various embodiments of the invention, by way of non-invasive observation of this coloration of the mucous or buccal membrane of the oral/pharyngeal cavity, one may obtain information regarding patient compliance with a medication regimen, such as whether the medication has been taken, the time elapsed since the medication was last taken, whether it is time for another dose of medication, etc. Thus, the present invention is very rapid, simple, and non-invasive as opposed to more invasive, tedious, and complicated monitoring methods, of the prior art such as the analysis of urine and stool samples, and injection of compositions.

Claim Rejections 35 U.S.C. § 112:

The Examiner has rejected claims 1-27 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. More specifically, the Examiner states that the phrase "contact staining" is new matter. As described above, the present invention includes a marker present in a form and amount sufficient to cause a coloration of at least a portion of a mucous membrane or buccal membrane of the oral and/or pharyngeal cavity of a patient. With reference to the entire specification, Applicant asserts that this coloration is a staining of the mucous or buccal membrane that occurs on contact with those membranes. Thus, Applicant submits that a "contact staining" is inherent in the disclosure of the present application. However, in order to overcome the rejection, Applicant has amended claims 1, 4, 5, 10-15, 19, and 24-27 to replace the phrase "contact staining" with the phrase "contact coloration."

Claim Rejections 35 U.S.C. § 102:

The Examiner has rejected claims 15-20 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,303,102 (the Schlichte '102 patent). In particular, regarding claim 15, the Examiner states that the Schlichte '102 patent discloses a marker in combination with one or more treatment drugs, medicaments, or a composition applied topically or orally, wherein the marker is a pigment or dye providing visual evidence for gauging the application and time since the application of

the medicine. Applicants respectfully disagree.

Regarding the Schlichte '102 patent, Applicants note that the entire patent is directed only to use in cutaneous or subcutaneous tissues. (See at least the title; column 2, lines 19-20; column 2, lines 33-34; and column 5, lines 16-19.) In contrast, Applicants submit that independent claim 15 of the present application recite the marker as causing contact coloration of a mucous or buccal membrane of the oral and/or pharyngeal cavity. Applicants further submit that the mucous and buccal membranes of the oral and/or pharyngeal cavity cannot be classified as cutaneous or subcutaneous tissues. The cutaneous and subcutaneous tissues make up the tissues of and relating to the skin. The mucous and buccal membranes recited in the claims of the present application, on the other hand, are mucous-secreting membranes that line the oral and/or pharyngeal cavity.

The teaching in the Schlichte '102 reference teaches only some marking of such cutaneous or subcutaneous tissue primarily through injection, such as into the cutaneous or subcutaneous tissue. For example, the reference teaches that an innoculation could mark the underside of a hide, the hide itself (cutaneous) or the fat at the injection site. Another alternative is an implant(subcutaneous). A process involving injection of a marker (or implantation of a marker) is completely different from the contact coloration described in the present application and recited in the claims. Injection is invasive. Injection requires the passage of some amount of time for the

marker to appear. These are some of the very drawbacks that are discussed in the "Background of the Invention" section of the present application, and which the invention of the present application overcomes. A system involving injection or implantation is not suitable for a medication regimen as described in the present application due to the drawbacks described above and discussed in the present application.

By contrast, the invention of the present application overcomes all the drawbacks associated with injection and implantation (and with markers designed to appear in cutaneous or subcutaneous tissues, as described in Schlichte), by providing and claiming an orally ingestable composition that colors the mucous or buccal membrane of the oral or pharyngeal cavity upon contact therewith. Such a method is simple and noninvasive. In contrast, nowhere is there a teaching or even a hint in the Schlichte '102 reference regarding a marker which is active for coloring a portion of a mucous membrane or buccal membrane of the oral/pharyngeal cavity. In fact, nowhere in the Schlichte '102 reference do the words "membrane" or "membranes" even appear. Thus, Applicants respectfully assert that the Schlichte '102 patent does not disclose each and every limitation of claim 15 of the present application and thus, neither does the Schlichte '102 patent disclose each and every limitation of dependent claims 2-14 and 16-27. Applicant thus respectfully requests a withdrawal of the rejection under 35 U.S.C. § 102.

Claim Rejections 35 U.S.C. § 103:

1. **Schlichte/Pather**

The Examiner has rejected claims 21 and 22 under 35 U.S.C. § 103(a) as being unpatentable over the Schlichte '102 patent in view of U.S. Patent No. 6,200,604 (the Pather '604 patent). In particular, the Examiner states that the Pather '604 patent discloses carmine and FD&C dyes, and that it would have been obvious to use such dyes in the marker composition of the Schlichte '102 patent for oral consumption, as taught by the Pather '604 patent. Applicants respectfully disagree.

With respect to the disclosure of the Schlichte '102 patent, as described above with respect to the § 102 rejection, Applicants respectfully submit that the Schlichte '102 patent only discloses a composition that is directed into cutaneous or subcutaneous tissues of a subject. The disclosure in the Schlichte '102 reference teaches only some time-consuming marking of such cutaneous or subcutaneous tissue, through invasive methods such as injection and implantation into the cutaneous or subcutaneous tissue. Nowhere is there a teaching in the Schlichte '102 reference regarding a marker which is active for staining a portion of a mucous membrane or buccal membrane of the oral/pharyngeal cavity. By contrast, the newly added claims of the present application recite that contact coloration occurs in a mucous or buccal membrane of the oral and/or pharyngeal cavity. Applicants submit that such contact coloration, as recited in the claims of the present application, is clearly very different

from the marking of the cutaneous or subcutaneous tissue through the very invasive methods taught by the Schlichte '102 reference. Thus, even if one were to combine the dyes of Pather with the composition of Schlichte, Applicants submit that such a combination would not teach each and every limitation of the claims since the composition would be directed into cutaneous or subcutaneous tissues by invasive methods.

2. **Schlichte/Kell**

The Examiner has rejected claims 23-27 under 35 U.S.C. § 103(a) as being unpatentable over the Schlichte '102 patent in view of U.S. Patent No. 5,776,783 (the Kell '783 patent). In particular, the Examiner states that the Schlichte '102 patent discloses a composition having multiple medications, but does not disclose a marker associated with each medicament. The Examiner then asserts that the Kell '783 patent teaches a composition having multiple medications and separate markers associated with each medication in the formulation to monitor compliance with drug ingestion. The Examiner states that it therefore would have been obvious to provide multiple medications with markers associated with each medication in the composition of the Schlichte '102 patent wherein each marker has a unique coloring characteristic and residence time in the tissue to monitor compliance with drug ingestion, as taught by the Kell '783 patent. The Examiner finally asserts that the marker may be any color and is visible under a variety of lighting conditions, as taught by the Schlichte '102 patent.

Applicants respectfully disagree.

With respect to the disclosure of the Schlichte '102 patent, as described above with respect to the § 102 rejection, Applicants respectfully submit that the Schlichte '102 patent only discloses a composition that is directed into cutaneous and subcutaneous tissues of a subject. The disclosure in the Schlichte '102 reference teaches only some marking of such cutaneous or subcutaneous tissue, through invasive methods such as injection and implantation into the cutaneous or subcutaneous tissue. Nowhere is there a teaching in the Schlichte '102 reference regarding a marker which is active for coloring a portion of a mucous membrane or buccal membrane of the oral/pharyngeal cavity. By contrast, the newly added claims recite that contact coloration occurs in a mucous or buccal membrane of the oral and/or pharyngeal cavity. As above, Applicants submit that such contact coloration, as recited in the claims of the present application, is clearly very different from the marking of the cutaneous or subcutaneous tissue through the very invasive methods taught by the Schlichte '102 reference. Thus, even if one were to combine the multiple markers of Kell with the composition of Schlichte, Applicants submit that such a combination would not teach each and every limitation of the claims, since the composition would be directed into cutaneous and subcutaneous tissues by invasive methods.

Further, Applicants assert that, were one to combine the Schlichte '102 patent and the Kell '783 patent, the combination does not teach the invention because

the Kell '783 patent discloses a method of monitoring patient compliance with a medical regimen by testing the urine of a patient. Thus, Kell also does not teach the contact coloration of a mucous or buccal membrane. Additionally, analysis of urine is a process that is time consuming, intrusive, requires scheduling, and requires the presence of a trained technician. These are the very drawbacks of current monitoring methods, described in the "Background of the Invention" section of the present application, that the present invention eliminates. In fact, urine analysis was one of the prior art monitoring methods that was discussed in the present application as wholly different than the compliance monitoring composition and method of the present invention. Even if one skilled in the art were to combine the teachings of Schlichte and Kell, they would not be directed to oral ingestion of a composition for contact coloration of a mucous or buccal membrane.

The present invention, by contrast, is rapid, simple, non-invasive, and inexpensive in that it is simply performed by observing a mucous or buccal membrane of the oral/pharyngeal cavity after oral ingestion for staining in order to determine compliance. Applicants thus respectfully assert that even if one were to attempt to detect the coloring agent of the Schlichte '102 patent, it could not be detected in the urine by the method disclosed by the Kell '783 patent, since such coloring agent would not be detectable in a patient's urine. Nor would such a coloring agent be visually observable in a patient's urine.

3. **Rittenburg/Schlichte**

The Examiner has rejected claims 1-7 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,068,981 (the Rittenburg '981 patent) in view of the Schlichte '102 patent. In particular, the Examiner states that the Rittenburg '981 patent discloses a method of monitoring compliance of a patient in a therapeutic or medication regimen wherein the method includes the steps of providing a therapeutic compound and a marker that passes into tissue and detecting the marker in the tissue. The Examiner then further states that it would have been obvious to one of ordinary skill in the art to use a detectable compound that colors tissues in the mouth, as taught by the Schlichte '102 patent in the method of the Rittenburg '981 patent to provide visual evidence for gauging the application and time since application of the medicament. Applicants respectfully disagree.

With respect to the disclosure of the Schlichte '102 patent, as described above with respect to the § 102 rejection, Applicants respectfully submit that the Schlichte '102 patent only discloses marking of cutaneous or subcutaneous tissues in the subject. The disclosure in the Schlichte '102 reference teaches only some marking of such cutaneous or subcutaneous tissue, through invasive methods such as injection and implantation into the cutaneous or subcutaneous tissue. Nowhere is there a teaching in the Schlichte '102 reference regarding a marker which is active for contact coloration of a portion of a mucous membrane or buccal membrane of the

oral/pharyngeal cavity.

By contrast, the newly added claims recite that contact coloration occurs in a mucous or buccal membrane of the oral and/or pharyngeal cavity. Applicants submit that such contact coloration, as recited in the claims of the present application, is clearly very different from the marking of the cutaneous or subcutaneous tissue through the very invasive methods taught by the Schlichte '102 reference. Further, the Rittenburg '981 patent does not teach contact coloration of the mucous or buccal membrane of the oral and/or pharyngeal cavity, as claimed in the present application. Further, Rittenburg does not disclose visualization of the oral/pharyngeal cavity. Rather, Applicants submit that Rittenburg discloses a compound that passes into a system (such as bloodstream, excretory, or other fluid or tissue), and then detects a marker in a fluid or tissue sample taken from the subject. Again, these methods described in Rittenburg are also very invasive and time consuming. These are drawbacks with previous marking methods that were discussed in the "Background of the Invention" section of the present application, and which the invention of the present application overcomes. Additionally, in using these methods, even if one were to combine the method of Rittenburg with the composition of Schlichte, such a combination would not teach each and every limitation of claim 1. As such, any combination could not render claim 1 obvious, and thus Applicants respectfully request a withdrawal of the rejection of independent claim 1, and dependent claims 2-7.

4. **Rittenburg/Schlichte/Pather**

The Examiner has rejected claims 8 and 9 under 35 U.S.C. § 103(a) as being unpatentable over the Rittenburg '981 patent in view of the Schlichte '102 patent, and further in view of the Pather '604 patent. In particular, the Examiner states that it would have been obvious to one of ordinary skill in the art to use carmine dyes or FD&C dyes, as disclosed in the Pather '604 patent, in the method of the combination of the Rittenburg '981 and Schlichte '102 patents. Applicants respectfully disagree.

In particular, as described above with respect to the rejection of claims 1-7, the combination of the Schlichte '102 patent and Rittenburg '981 patent do not disclose all the limitations of independent claim 1 of the present invention. In particular, the Schlichte '102 patent discloses use of its compositions only in cutaneous or subcutaneous tissues, not contact coloration or observation in mucous or buccal membranes. Nor does the Rittenburg '981 patent disclose observation in the mucous or buccal membranes. Thus, any combination of the Schlichte '102 patent disclosure with the method described in the Rittenburg patent would not disclose each and every limitation of the present application, since the combination of those two patents would not disclose contact coloration in a mucous or buccal membrane of the oral and/or pharyngeal cavity of the patient. Thus, since independent claim 1 would not be rendered obvious, Applicants respectfully submit that neither would dependent claims 8 and 9 be rendered obvious in further view of the Pather '604 patent.

5. **Rittenburg/Kell/Schlichte**

The Examiner has rejected claims 10-14 under 35 U.S.C. § 103(a) as being unpatentable over the Rittenburg '981 patent in view of the Kell '783 patent further in view of the Schlichte '102 patent. In particular, the Examiner states that it would have been obvious to provide a composition with multiple medicaments in the combination of Rittenburg and Kell, wherein each maker has unique coloring characteristics, residence time, and lighting conditions, as taught by Schlichte. Applicants respectfully disagree.

With respect to the disclosure of the Schlichte '102 patent, as described above with respect to the § 102 rejection, Applicants respectfully submit that the Schlichte '102 patent only discloses use of the composition as directed into cutaneous or subcutaneous tissues. Thus, it does not disclose contact coloration in the mucous or buccal membranes. Neither do Rittenburg or Kell disclose contact coloration of the mucous or buccal membranes. Further, the method of Rittenburg discloses detecting marker in a body fluid or tissue that has been collected, while Kell discloses detecting a marker in a urine sample. By contrast, the newly added claims recite that contact coloration occurs and is visualized in a mucous or buccal membrane of the oral and/or pharyngeal cavity. Thus, Applicants submit that even if one were to combine the disclosures of Rittenburg, Kell, and Schlichte, such a combination would not teach each and every limitation of the claims.

Further, each of the Schlichte, Kell, and Rittenburg references describe invasive and time-consuming methods that the present application overcomes by the claimed composition and method. Thus, one of ordinary skill of the art, even were they to combine those references, would not be directed to the simple and rapid method of the present application. As described above, the Schlichte '102 patent discloses a composition which may mark only a cutaneous or subcutaneous tissue, and the Kell '783 patent discloses a method of monitoring patient compliance with a medical regimen by testing the urine of a patient. Applicants thus respectfully assert that even if one were to attempt to detect the coloring agent of the Schlichte '102 patent, it could not be detected in the urine by the method disclosed by the Kell '783 patent, since such coloring agent would not be detectable in a patient's urine. Nor would such a coloring agent be visually observable in a patient's urine. In fact, as decribed above, these are the very invasive and time consuming drawbacks, that the invention of the present invention overcomes. Applicants further assert that the combination of Rittenburg with Schlichte would fail for the same reasons as the combinations of Kell and Schlichte.

Conclusion:

For the foregoing reasons, Applicants submit that all claims are patentable and a Notice of Allowance is respectfully requested.

No fee is believed due with this submission. However, if any additional fee or surcharges are deemed due, please charge same or credit any overpayment to

Deposit Account No. 23-3000.

The Examiner is invited to contact the undersigned attorney with any questions or remaining issues.

Respectfully submitted,

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